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Fine structure of density ducts formed by active radiofrequency action on laboratory and space plasmas

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Abstract

© 2015, Pleiades Publishing, Inc. The results of active ionospheric and model laboratory experiments on the generation of artificial irregularities of a magnetized plasma (density ducts), which can be used as waveguide channels for low-frequency waves, have been reported. It has been found that ducts formed at the localized high-frequency heating of the plasma have a fine structure under certain conditions: they include irregularities of the plasma density, which significantly affect the propagation of low-frequency waves, ensuring the deep amplitude modulation of low-frequency radiation and changing its spatial structure. A mechanism of the formation of such irregularities has been proposed.

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